California State University, San Bernardino
CSUSB ScholarWorks

Theses Digitization Project

John M. Pfau Library

2004

Electronic government: Reforming Thai government for ministry of interior of Thailand

Kritchakorn Nontanakorn

Follow this and additional works at: https://scholarworks.lib.csusb.edu/etd-project

 Part of the Public Administration Commons

Recommended Citation

Nontanakorn, Kritchakorn, "Electronic government: Reforming Thai government for ministry of interior of Thailand" (2004). *Theses Digitization Project*. 2454.
https://scholarworks.lib.csusb.edu/etd-project/2454

This Project is brought to you for free and open access by the John M. Pfau Library at CSUSB ScholarWorks. It has been accepted for inclusion in Theses Digitization Project by an authorized administrator of CSUSB ScholarWorks. For more information, please contact scholarworks@csusb.edu.

ELECTRONIC GOVERNMENT: REFORMING THAI GOVERNMENT FOR MINISTRY OF INTERIOR OF THAILAND

A Project

Presented to the

Faculty of

California State University,

San Bernardino

In Partial Fulfillment

of the Requirements for the Degree

Master of Business Administration

---

by

Kritchakorn Nontanakorn

June 2004

ELECTRONIC GOVERNMENT: REFORMING THAI GOVERNMENT FOR MINISTRY OF INTERIOR OF THAILAND

A Project

Presented to the

Faculty of

California State University,

San Bernardino

---

by

Kritchakorn Nontanakorn

June 2004

Approved by:

[redacted]

Frank M. Lin, Committee Chair

5/12/04

Date

[redacted]

C.E. Tapie Rohm, Second Faculty Reader

[redacted]

Walter T. Stewart, Department Chair

© 2004 Kritchakorn Nontanakorn

ABSTRACT

The Thai government and the Ministry of Interior have realized the importance and necessity of E-Government and believe that it will play significant roles in the future. The concept has been supported by the establishment of the Ministry of Information and Communication Technology who leads the movement of this technological development at the end of the year 2002.

It is believed that each country should develop its own E-Government strategy. The Thai government and the Ministry of Interior seek to improve public services and give the assurance that all Thai people can access governmental services at all time throughout Thailand. The Ministry of Interior considers E-Government as a perfect solution. At the preliminary stage of the approach, it is necessary to specify the clear technical strategies in accordance with the status and ability of the Ministry.

Refer to the context, it could be claimed that E-Government in Thailand is still at the preliminary stage, and it appears that there are many challenges the Ministry is facing.

ACKNOWLEDGMENTS

I am so grateful for California State University, San Bernardino for the excellent education that the university has provided me. Especially, I would like to thank my committee chair, Professor Frank Lin, and my committee members, Professor C.E. Tapie Rohm, and Professor Walter Stewart, who have guided me through the desired outcome.

I would like to dedicate this project to my parents, Mr. Krisda and Mrs. Punthira Nontanakorn, who gave me the opportunity to complete the Master's degree, and also to thank them personally for all their effort and support throughout my college years.

Additionally, I would like to thank my uncle and my aunt, Mr. Paul A. Daly and Mrs. Kanikar Daly, who encourage me throughout the academic years. Without their help and especially their support, it is questionable whether I could be in a position to reach up to this point.

Finally, I would like to thank my friends, Mr. Lloyd Vatanakovarun and Mr. Pichot Sinthavalai for helps and advices they have given me. Without their supports, this project will be far from complete.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

CHAPTER ONE

INTRODUCTION

During the past decade, electronic government (E-Government) has gained attention and been widely discussed in many countries. From its very beginning, the leaders in many countries started to think that as the environment and the way of living had transformed, the public or governmental sector had to adapt to meet the expectations of its citizens. Information Technology, according to this idea, has played the primary role for the plan's effectiveness.

Information technology and communication network revolutionizes the world today. More specifically in E-Government, it is a new technique to effectively manage data used in providing services to the public. Connecting different divisions together and provide the One-Stop-Service to the public is the main objective, and formulating the right strategy in order to achieve this objective is very crucial.

E-Government in Thailand is not categorized as a new topic. In the past decade, the reformation and reengineering in many government sectors were widely discussed (Aksararak & Pornwasin, 2004). Ever since Thai

government integrated the uses of computer to better its public services, the inspiration of employing the automated system which provides faster and more accurate communication had also arisen.

In fact, the thought of taking advantages of the new technology, the Internet, to be implemented into the governmental sector in Thailand has already been initiated in the past several years. The Ministry of Information and Communication Technology who leads the movement of this technological development was introduced to the public at the end of the year 2002. With the support from the Ministry, the technological transformation will no longer be an idea.

Up until now, Thai government has put a lot of effort into the E-Government. It is considered as a part of the government's reengineering. However, the project is still a challenge to accomplish because changing the structure and behavior of the organization is not a straightforward task.

Problem Statement

How can the Ministry of Interior of Thailand achieve its main objective to better serve its citizens in the next 5 years?

Purpose of the Project

To develop an E-Government plan to achieve the Ministry of Interior of Thailand's objective in better serve its citizens in the next 5 years by utilizing and taking advantages of the use of information technology and communication networks.

Benefits of the Project

The benefits of this study are the followings:

1. An explanation will be made based on the assessment strategy, which provides a framework for information technology tools to achieve its primary objective, on satisfaction of Thai citizens.
2. The information from the study can be used as a guideline for the Ministry of Interior of Thailand to fulfill its objectives in formulating its strategies in information technology-related project.
3. The details from the project can be used as a principle for developing extended information technology plan for the Ministry of Interior of Thailand.

4. This project will give a guideline for other public sectors in the country that may have interest in employing the concept of E-Government.

Limitations of the Project

The study is limited to one organization, the Ministry of Interior of Thailand. The scope of the project covers the assessment, evaluation, implementation, and transition plan for the Ministry of Interior of Thailand. Time, distance, and financial constraints are limiting factors of this study.

CHAPTER TWO

REVIEW OF THE LITERATURE

Information Technology

Understanding of the role of information technology is crucial to achieve the goal of the project. We presume that a highly competitive situation in the world today has been created by changes in environmental, organizational, and technological factors. Therefore, it is beneficial for the organizations to understand and be able to react to the factors that increase the pressures of operating their businesses (Turban, McLean, & Wetherbe, 2001).

Information technology and the new breed of computing are helping the organizations not only to excel but also frequently to survive. In the world today, information technology has become the major facilitator for any activities (Tapscott & Caston, 1993).

Cole (2001) indicated that the organizations are frequently facing with the different scenarios. Opportunity, uncertainty, advantage, and risk are seen as the functions created by information technology. In addition, two key dimensions must be considered along with the organizational development: (1) the impact of IT on

core operations and (2) the impact of IT on core strategy (Applegate, Austin, & McFarlan, 2003).

The amount of information available on the Internet increases more than doubles every year (Turban, McLean, & Wetherbe, 2001). One important function of information technology is to deliver the system that provides convenience to every one. Without information technology, life would be far different. The workforce is changing rapidly and becoming more diversified. Information technology is easing the integration of the complexity in the traditional workforce.

Strategic Information Technology

Providing direction, concentration of effort, consistency of purpose, and flexibility will serve the right means for organization to improve its competitive position. Boar (1993) clarified that strategic planning is the process by which organization objectives for the future are identified in response to perceived opportunities and threats, and, by understanding its strengths and weaknesses, activities are selected and resources allocated to meet those objectives.

Justifying the technological perspective is necessary for the organization (Sutherland & Morieux, 1991). Many of

the problems which arise in relating information technology to business strategy, and vice versa, have driven by the technological forces. There are four ways in which information technology can be used strategically: (1) to improve productivity and performance, (2) to enable new ways of managing and organizing, (3) to gain competitive advantage, and (4) to develop new businesses.

Assessment is the step to help justifying the technological perspective (Boar, 1993). It is categorized as the through analysis of the environment to decide what to focus attention upon. Filtering the candidates to a preferred set which demands strategic attention and response is the main purpose of the assessment. In addition, viewing the organization from multiple dimensions will help uncover gaps of performance, execution, and opportunity.

The empirical evidence has proved that controlling the information is essential (Macdonald, 1998). The organization must deploy a good plan on its strategic change. The information must not only be sought outside the organization, but must also flow along organizational channels. Consequently, its transfer from one part of the organization to another requires as few transactions as possible.

However, many organizations today are experiencing continually increasing information systems costs (Cassidy, 1999). In addition to increasing costs, organizations are finding their information to be a bottleneck to business improvements and growth. Investing in information technology involves in enlarging costs. There are three main cost components: investment costs, operating costs, and allocated costs (Gardner, 2000). Therefore, the organization must carefully review its business strategy in order to maximize its benefits and to make the changes worth.

Strategic planning process has opened the door to significantly improve the communication between business management and information technology (Cassidy, 1999). The most important issue is that when an excellent understanding of the current systems has been obtained, the business direction can be determined without difficulty.

Enterprise Architecture

Enterprise Architecture Planning (EAP) is defined as a set of methods for planning the development of information, applications, and technology architectures, and, for aligning those three types of architecture with

respect to each other (Spewak, 1993). The main concept is that the strategies being pursued by an organization must be aligned with the information technology to ensure that such architectures form developed from the blueprints will be able to solve the business problems at the end of implementation stage.

The enterprise architectures, which have been defined as blueprints, provide a clear and understandable picture of the organization's uses, features, functions, and supporting systems, including relevant organizational standards (United States General Accounting Office, 2003). It is the method that allows the organization to be beneficial through the measurement of an entity's existing and planned component parts and parts' relationships before the costly and time-consuming efforts associated with developing or transforming the entity begin.

E-Government Concept

The growth of information and communication technology infrastructure and services in the public and private sectors has been considered widely. The Internet opens new opportunities for streamlining processes and enhancing delivery of services. In general, electronic government refers to the use of technology, particularly

web-based Internet applications, to enhance the access to and delivery of government information and service to citizens, business partners, employees, other agencies, and entities (McClure, 2001).

Electronic Government is a principal for the public sector to improve (1) services to citizens, (2) support delivery of services, and (3) internal operations and infrastructure (Forman, 2002). Therefore, it is usually considered as a reformation method to the government. The project aims to provide citizens, businesses and visitors to the country with a one-stop place where they can access government services.

Managing the migration from agency-specific systems to consolidated systems will be a challenge (Koontz, 2003). Regarding the traditional systems that have been used for decades or centuries, agencies may be required to shut down existing systems and invest in additional or updated technology to use the new, consolidated systems.

Willemssen (2003) also suggested that many opportunities to better serve the public, make government more efficient and more effective, and reduce costs are the inspiration for the success of the E-Government. The project must focus on a wide variety of services, aiming to simplify and unify agency work processes and

information flows, the one-stop services to the citizens, and the elimination of information redundancy in the organizations.

Strengths, Weaknesses, Opportunities, and Threats (SWOT) Analysis

Lamp, Hair, & McDaniel (2000) indicated that the current and potential environment in which the service will be promoted is essential to the organization. A SWOT analysis is referred as a situation analysis which will help the organization to recognize; that is, the organization should identify its internal strengths [S] and weaknesses [W] and also examine external opportunities [O] and threats [T].

Strengths

Strengths are the collective organizational competencies, assets, and capabilities for which organization has achieved a high level of proficiency (Boar, 1993). Strengths are the advantages that occur from the internal environment of the organization.

Weaknesses

In contrast, weaknesses are the disadvantages or problems that occur from the internal environment of the organization (Solomon, 1999). Finding the cause of problems and solving them are the challenges facing the

organization. Frequently, people outside of the organization perceive weaknesses long before the organization becomes aware of them. Therefore, examining from the different perspective helps indicate weaknesses faster.

Opportunities

Opportunities can be classified according to their success probability. Trends or events that could lead to a positive change in position if addressed by a strategic response are called opportunities (Boar, 1993).

Threats

Kotler (2001) explained that environment threat is a challenge posed by an unfavorable external trend or development that would lead to the decline in profit. Minor threats can be ignored but major threats require the development of the contingency plans that give flexibility to the organization.

Organization Behavior

Organizations are rarely established as ends in themselves. They are instruments created to achieve other ends. Ideas about tasks, goals, aims, and objectives have become such fundamental organizational concepts. Knowing the organization and being able to read the situation are

even more important. The managers and professionals must adopt their skills through experiences and natural abilities to handle any particular circumstances (Morgan, 1996).

Regarding bureaucratic organization, Lee and Smith (2001) use organizational theory to characterize restructuring as activities that move away from a bureaucratic organizational form (promote specialization and differentiation, feature top-down hierarchies, and promote formal goals and expectations) and move toward a communal organizational form (promote shared responsibility, shared commitment to a common set of goals, lateral communication and power in decision making, and greater personalization and individual discretion).

Political and Information Technology

Sutherland & Morieux (1991) explained that political institutions or governmental institutions are formed to deal with community problems. It becomes crucial in its constitution where political decisions are concerned. The monopoly of political institutions makes them vulnerable to embedded conflict. Better understanding of the hierarchy of principles will eliminate the conflicts and efficiently flow the decision making processes.

History of Thai Bureaucracy

Suthikool (2003) argued that Thai history is usually divided into five chronological periods based on empires, kingdoms, and dynasties. During these periods in Thai history, there were many attempts to reform the Thai bureaucratic system, but they had rarely succeeded.

During the 1990s, the Thai Government had been subject to frequent and significant changes (Surachaichotiphan, 2001). The new Constitution in 1997 has provided the Senate more power to scrutinize bills passed by the House of Representatives. Separating the bureaucratic from the political pressure was widely discussed among the public and the idea of reforming public sector had also arisen.

Yuthavong & Wojcik (1997) added that while Thailand's economy traditionally has been agriculturally based, growth in the science and technology has put pressure on the country to play more significant role in the industrial sector. This move motivates both private and public sector to develop continuously in order to achieve the performance levels to international standards.

Thailand, during the past decade, like other countries throughout the world, has been influenced by the impact of globalization and technological development.

Social and economic considerations are becoming even more complex, as are the political processes and political development within the country and its relations with other nations. Since the traditional administrative mechanisms are no longer appropriate to the national and world situation, supportive government policies and efficient bureaucratic services are needed to bring the country to the stage where it can compete with others (Suthikool, 2003).

CHAPTER THREE

METHODOLOGY

Development

The framework and methodology employed for this study are described in the following sections:

Resources and Content Validation

The first step of the Project was to obtain necessary data. The data used in this project has been acquired from both internal and external sources. The internal data, which was distributed and used within the organization, was obtained from the Ministry of Interior of Thailand and the Ministry of Information and Communication Technology of Thailand. The data contained service details and characteristics, the Ministry's responsibilities, internal procedures, and other specific information.

The external data was obtained from different public institutions, state enterprises, Internet websites, public libraries, and other paper-based resources. Internet-based sources used in the assessment and analysis included Internet websites of educational units and government sources. Paper-based resources entail description from textbooks, academic journals, and newspapers.

Design

Primary data has been gathered from 2003 to 2004. Descriptive method was employed in order to assess and analyze the data and acquired information to determine how electronic government concept should be implemented in Thailand.

Understanding of the E-Government concept and how to utilize it are the primary aims of this project. Any accessible information will be utilized to create a successful plan for reforming the Ministry of Interior of Thailand. Furthermore, evaluating and tracking the performance of the organization will also be used as the method of the assessment.

Data Analysis Procedures

The methodology applied in this project primarily follows the assessment and strategy guidelines conducted by Boar (1993). Strategic planning, which is the process to identify the future direction of the organization, will be developed based on the analysis. Strengths, weaknesses, opportunities, and threats will also be utilized to help establish all long-range planning and operational planning.

CHAPTER FOUR

RESULTS AND ANALYSIS OF THE STUDY

Brief History

King Chulalongkorn, Rama V issued a command announcing the founding of the Ministry of Interior on April 1, 1892 and appointed Prince Damrongrajanubhap the first Minister of Interior. The work of the Ministry of Interior at the initial stage was divided into three Departments, namely the Department of Central Interior, being in charge of general tasks; the Department of Northern Interior, being in charge of crime suppression and the public prosecution work, and the Department of Provincial Administration, being in charge of provincial administration.

In 1892, Prince Damrongrajanubhap organized a new system of provincial administration by dividing administration into circles, towns and districts. Subsequently, in 1933, the Executive Service Regulation of the Kingdom of Thailand Act B.E.2476 was issued, which divided to structure of national administration into Local Administration, Provincial Administration and Local Administrations. Consequently, the Ministry of Interior had its structure according to the Act Establishing the

Government Departments B.E.2576 and the Act Improving the Government Departments B.E.2576, under which the provincial governor (commissioner) and the district chief officer, who were government servants under the Ministry of Interior, had the titles of Province Committee Chairman and District Committee Chairman. As regards local administration in which it was provided that there were various forms of self government, it was also in care of the Ministry of Interior.

Therefore, the executive service regulation has been revised and the works of the government departments have been further divided many times to date.

Organization Structuring

Thus far, the Ministry of Interior has classified its service divisions into 8 department level agencies:

1. Office of the Secretary to the Minister
2. Office of the Permanent Secretary for Interior
3. Department of Local Administration
4. Community Development Department
5. Department of Lands
6. Department of Disaster Prevention and Mitigation
7. Department of Public Works and Town and Country Planning

8. Department of Local Administration

And the Ministry of Interior also classified state-enterprise agencies into 5 different divisions:

1. Metropolitan Electricity Authority
2. Metropolitan Electricity Authority
3. Metropolitan Waterworks Authority
4. Provincial Waterworks Authority
5. Marketing Organization

Organization Culture

The ministry can also be called bureaucratic organization which sets its norms to be strengthened with the rules and laws. The directives are given and these have to be followed so that the organization could act effectively. The systematic division of labor, rights, and power are essential for a rational organization. Everyone in the organization has not only to be aware of his or her tasks and means of acting but also he or she must know the limits of his or her tasks, rights, and power. Ministry of Interior of Thailand, as a bureaucratic organization, follows the principle of hierarchies.

However, the organization culture of the Ministry of Interior of Thailand has been changed recently because of the awareness of improving its practice. Organization has

been flattening as well as the elimination of the unity of command. New method of management, so-called Matrix Reporting System, is now in use to flow the procedures.

The Ministry has planned to flatten its organization by using the organization networking approach. This approach is characterized as a systematic approach that integrates people's knowledge's, not to work by commands or orders from people in higher hierarchy. Therefore, it can possibly let the subordinates work faster and more effective.

Vision

The Ministry of Interior will be the main organization supporting local administrations to have efficient and sufficient administration resources to provide public services efficiently, according to the wishes of the people. This will be achieved by providing a provincial administration system, which is ready to assist local administrations. It should inspire the people to have confidence in the system of law, the services it provides and the open and clear manner in which the system operates. It will be a supporting organization for rural development by developing cities in accordance with environmental quality standards. This will be done through

efficient use of land, and the development of high quality infrastructure which will be able to support ongoing economic development and the growth of society. It will add to and increase the quality of life.

To achieve these goals, the Ministry of Interior will exploit modern information technology to enhance performance by taking on schemes and projects that can be monitored and evaluated in a tangible way. Personal development, with an aim to having good morale and confidence in a morally principled system, will be exploited as a means for management administration.

Mission

Thailand can be described as a leader among the nations in Southeast Asia since it has been served the region as a center of the information technology development. With this advantage and its advance, Administration to Citizen Center, the Ministry of Interior of Thailand believes that it can achieve its objectives in providing satisfactory services to its customers, the people of Thailand, without difficulty.

Core Values

1. Quality of services: The services provided by the Ministry must be uniquely suited to all the needs of the people of Thailand.
2. Public focused: The Ministry rapidly assembles all the information needed to present by establishing the information center which can be accessible by the people via website.
3. Quality decisions that improve conditions: The Ministry has gained experience and knowledge by the result of the translation of centuries of providing services into a practical decision making.
4. Learning organization: The Ministry has an intention to improve its services. Therefore, continuous learning to improve the quality of services will be a significant factor to achieve its superior performance.
5. Continuous improvement: The reengineering is only the preliminary stage. As the E-Government proposal has been initiated, the Ministry can advance its system and implement in the field of the innovation.

Alignment

According to the assessment, it can be concluded that the Ministry and its elements are not aligned. The organization strategy that has been formulated will not work if the elements do not support. Coordination between them is required in order to be successful.

Therefore, the Ministry must prepare itself for the upcoming situations that can occur. The implementation plans which will be discussed in the following chapter will not only determine the path for the Ministry to move itself into, but also help aligning the Ministry's position and its elements with the awareness of the existing turbulent environment.

Position

Service Description

The Ministry of Interior of Thailand is the primary institute to rest and secure the interior, and develop the core economy, as well as to supply the integrated management approach in the country in order to maintain the effective administration, inhabitable environment, moral principle, and peaceful surrounding to the Thai citizens.

Services provided to the citizens of Thailand provided by the Ministry of Interior and its agencies principally include:

1. Common registration
2. Voting registration and electoral examination
3. Identification card issuing
4. Local administration advancement
5. Community and economy development assessment
6. Responsibilities in providing, servicing, and maintaining infrastructure

Indeed, people commonly use the services through the Department of Provincial Administration which is one of the most important departments in the Ministry of Interior. As described, its tasks follow the people's lifetime from birth until death. The Ministry realizes that the new era of the information and communication technology has granted the new vehicle to deliver these services to its clients. Therefore, the importance of centralizing the data and the paradigm of utilizing and leveraging the information are determined as the success factors to create the highest level of user functionality ever accomplished in the country.

Human Resource Management

The Ministry of Interior and its agencies have their own staff including government officials, staff and employees, of agencies under Central Provincial and Local Administrations.

Power and authority are the most important issues mainly discussed in the public sector. The minister and the management have direct influences to the subordinates. Legitimate power referred to the bureaucratic organization theory is crucial for the decision making in the Ministry. However, forms of the power, authority, and institution must lead to the higher levels of transparency and accountability in order to strengthen democracy.

Information Systems

Thailand has in fact emphasized and initiated many national-level projects which are aimed at the use of information and communication technology to raise the standard of living and quality of live of the people. Most of the project in the past before the foundation of the Ministry of Information and Communication Technology were initiated by the National Electronics and Computer Technology Center (NECTEC) as part of the Thai government's information technology policies.

Information and communication technology is the backbone of the E-Government project. The Ministry of Interior not only arranges the centralized information for its organization but also provides a website for preliminary accessing to support its services promised to provide the information of the citizens.

However, Thailand, regarding the research and development in science and technology, has not been growing at the rapid rate. Expenditures in the information and communication technology are low in the comparison with the GDP (See Table 1). This issue is also considered as the obstacle if Thailand continues to employ technological approaches in the future.

Table 1. Export and Import of the Computers, Devices, and Peripherals

Description	2000	2001	Unit
Export value	344,049	346,589	Million Baht
- Growth rate	12.8	0.7	%
- IT export/Total export	12.4	12.0	%
Import value	147,612	167,704	Million Baht
- Growth rate	59.7	13.6	%
- IT import/Total import	5.9	6.1	%
Import/Export	42.9	48.4	%

Source: Ministry of Information and Communication Technology of Thailand. 2003. p. 13.

SWOT Analysis

Opportunities

1. The growth of the Internet and the acceptance of the E-Government concept.
2. According to the e-ASEAN Initiative 2002, the leaders of ASEAN countries are moving their attitude to have more interest in developing the information and communication technology.
3. Enhancing the international relations with the countries that have already employed the concept of E-Government will also create a chance for the Ministry to improve itself by observation.
4. The growths in wireless networks and broadband communication industries have brought the significance to the public.

Threats

1. The copyright issue in the global stage has increased the cost of development of information and communication technology.
2. The delay of Thai government in establishing standards regarding the information and communication technology.
3. A threat from the intruders, hackers, and viruses which refer as the network securities.
4. Employees' knowledge in the neighbor countries have been rapidly developed in the field of increasing in quality.
5. Turmoil in the world economy is the obstacle in the development of the information and communication technology.

Strengths

1. Several information and communication technology acts have been approved by the government.
2. Both private and public sector have invested to construct the infrastructure of information technology.
3. The Ministry of Information and Communication Technology has just established to support the infrastructure of information technology.

4. Significant vision of the prime minister to grant the importance of applying the concept of E-Government into the public sector.
5. The efficiency of expanding the information and communication technology of Thailand.
6. The development in structure of the education system to support the need of technological knowledge in the future.
7. The appointment of the chief information officer (CIO) in the public sector, including the Ministry of Interior.
8. The awareness of Thai citizens in the information and communication technology.

Weaknesses

1. Thailand has not adapted the regulations to support the entry process to the new economy environment.
2. The lack of knowledge in English language which requires in the use of the Internet.
3. The lack of employees in the public sector to work with the information and communication technology.
4. The curriculum in the educational system has not fully support the thought of innovation.

5. The distribution in communication system is inefficient. People in rural area take no advantage from the improvement of the information technology.
6. Because the investment in information technology is large, the shortage in public sector's budgeting may be an obstacle.
7. The fluctuation of Thai Baht compared with the U.S. Dollar leads to the unstable circumstance in the economy system.

Strategy

Strategy Statement

Regarding the assessment, the Ministry of Interior has realized that obtaining the use of information and communication technology to develop and reform its entire system creates an ability to achieve the efficiency and effectiveness in providing services. The strategies that take place in this project are a reformation of planning and budgeting, change in organization structure, and development of employees' knowledge.

Strategic Objectives and Goals

With its bureaucratic reform policy, the government is trying its utmost to resolve the problem of

administration and improve its policy to go along with the new guidelines of government management. The main policy, according to the new guidelines, aims to give better service to the people, adjust the role, mission and size of each agency, and raise the capability and working standards, to an international level, to suit the administration of a democratic government.

The strategies must aim toward transforming working processes and methods, revamp the country's administrative structure, and improve the financial and budget system. In addition, the strategies include rethinking the personnel system and setting new pay scales, revising the vision of culture and the value of the bureaucratic system, encouraging modernization by applying electronic technology, and giving more chances for people not in the government to participate in the bureaucratic system.

The main objective that must be achieved according to this project is to enable full service of the portal site for public services to Thai citizens in 2005. Furthermore, the long-term plan which is scheduled to accomplish in 2010 will include the comprehensive services. Information and communication technology is considered as the backbone of the Ministry's strategies. Not only does the Ministry supply its information to the citizens, but the Ministry

also adopts the information technology in the procedures within the organization itself. The Ministry believes that the technology creates applications that provide direct strategic advantage.

In addition, the Globalization and the Internet plays an increasingly important role in supporting intelligence. The Ministry is intentionally focusing on the Internet to provide sustainable advantage. The Ministry promises to improve its functions and operations within the organization thus far.

Change Management Plan

The Ministry of Interior is not the innovative organization and it is directing with flat organization. The most complex barrier to overcome is the communication between the authorities and employees. Principally, according to bureaucratic organization culture, dealing with the change of technology and the new approach of working process in the Ministry will be a barrier in the reformation. New idea, new strategy, and new technology which would apply into the Ministry need to be organized to the employees for their understanding. Educating and training should be the core supporting procedure for those changes in terms of change of organization itself and change for employees.

Commitment Plan

Commitment plan can provide effective implementation and resolve the problems in the Ministry. Commitment plan in this project will be formulated based on the change management plan.

Refer to the assessment, the vision, mission, and core values are not yet understood clearly through entire organization. Distributing them to all employees is enhancing their understanding in the Ministry's strategy to move toward the same direction effectively and efficiency.

Additionally, reforming the organization will not be done without participations and supports from the employees. Encourage all employees in the Ministry to participate in the planning and implementation of the information and communication technology strategy will allows the Ministry accomplishes to its next level.

Enterprise Architecture

Assessment in Brief

The reformation of Thai government regarding the usefulness of information and communication technology has been initiated only for a short period of time. The Ministry of Interior of Thailand's use of the enterprise

architectures is a work in progress, with much left to be accomplished. Enterprise architectures are served as the blueprint for the Ministry to manage its information system effectively and to help optimize the interdependencies and interrelationships among the Ministry's agencies.

The ability to effectively manage an organization with the information system derives from the success of the enterprise architectures. It is found that the management practices in the Ministry of Interior and its agencies that provide the foundation for developing, completing, and leveraging architectures have not been satisfied and can possibly lead to the failure of the project.

In general, the obstacles of the enterprise architecture planning that occurred in any organizations can be varied. According to the Ministry of Interior of Thailand, the most important issue has been identified as the lack of understanding of purpose, content, and value of the architectures by the executives and their employees. The construction of knowledge of information and communication technology has not been embedded into the Ministry. As a result, this issue has increased the

risks to the Ministry if the E-Government project is implemented.

Maturity Level of Enterprise Architectures

Effective use of enterprise architectures is a recognized hallmark of successful public and private organizations (United States General Accounting Office, 2003). The framework called Enterprise Architecture Management Maturity Framework (EAMMF) has been introduced by the United States General Accounting Office in 2002 in order to assist the United States government in implementing its E-Government plan.

At the early stage of the government reformation in the United States, there had been no method for measuring status and progress. Thus, the framework is served with an intention to standardize the evaluations in the different departments and agencies. Basically, the framework consists of three interrelated components to evaluate the organization: hierarchical stages of management maturity, categories of attributes that are critical to success in managing any endeavor, and elements that form the core constituent.

In this project, the Enterprise Architecture Management Maturity Framework will also be employed to determine the stage that the Ministry of Interior of

Thailand has gone through. Understanding of this model allows the Ministry to assess progress toward the desired end and to take corrective action to address unacceptable deviations.

The model is made up of five stages of maturity. The information provided by the Ministry of Information and Communication Technology of Thailand has indicated that the maturity level of the Ministry of Interior and its enterprise architectures is at Stage 2, building the enterprise architecture management foundation. Assigning the management roles and responsibilities and establishing plans for developing enterprise architecture products are the processes that the Ministry is trying to accomplish.

The enterprise architecture is realized as a corporate asset for the Ministry of Interior and is believed to be essential to the success of the reformation. However, the Ministry's critical success attribute is at the first level since it has only demonstrated the commitment.

In conducting the analysis using this framework, each core element categorized into a series of five related and hierarchical stages must also be evaluated (See Table 2). The purpose of the evaluation is to determine whether the element is satisfied.

To afford the advance in planning, the Enterprise Architecture Management Maturity Framework has provided a roadmap for incremental improvement of architecture management of the Ministry. Therefore, the processes and steps of how those elements need to be done have to be discussed in the implementation phase of the project.

Table 2. The Ministry of Interior and Five Stages Enterprise Architecture Management Maturity Framework

Stage	Description	Satisfied?
Stage 5: Leveraging the EA for Managing Change	• Written/approved policy exists for EA maintenance. • Either EA steering committee, investment review board, or agency head has approved EA. • Metrics exist for measuring EA benefits.	• No • No • No
Stage 4: Completing Architecture Products	• Written/approved policy exists for information technology investment compliance with EA. • EA products describe enterprise's business – and the data applications, and technology that support it. • EA products describe "as is" environment, "to be" environment, and sequencing plan. • Agency chief information officer has approved EA.	• No • No • No • No
Stage 3: Developing Architecture Products	• Written/approved policy exists for EA development. • EA products are under configuration management. • EA products describe or will describe enterprise's business - and the data, applications, and technology that support it. • EA products describe or will describe "as is" environment, "to be" environment, and sequencing plan. • EA scope is enterprise-focused.	• No • No • No • No • No
Stage 2: Building the EA Management Foundation	• Committee or group representing the enterprise is responsible for directing, overseeing, and/or approving EA. • Program office responsible for EA development exists. • Chief architect exists. • EA being developed using a framework and automated tool. • EA plans call for describing enterprise in terms of business, data, applications, or technology. • EA plans call for describing "as is" environment, "to be" environment, or sequencing plan.	• Yes • Yes • Yes • Yes • Yes • Yes
Stage 1: Creating EA Awareness	• Agency is aware of EA.	• Yes

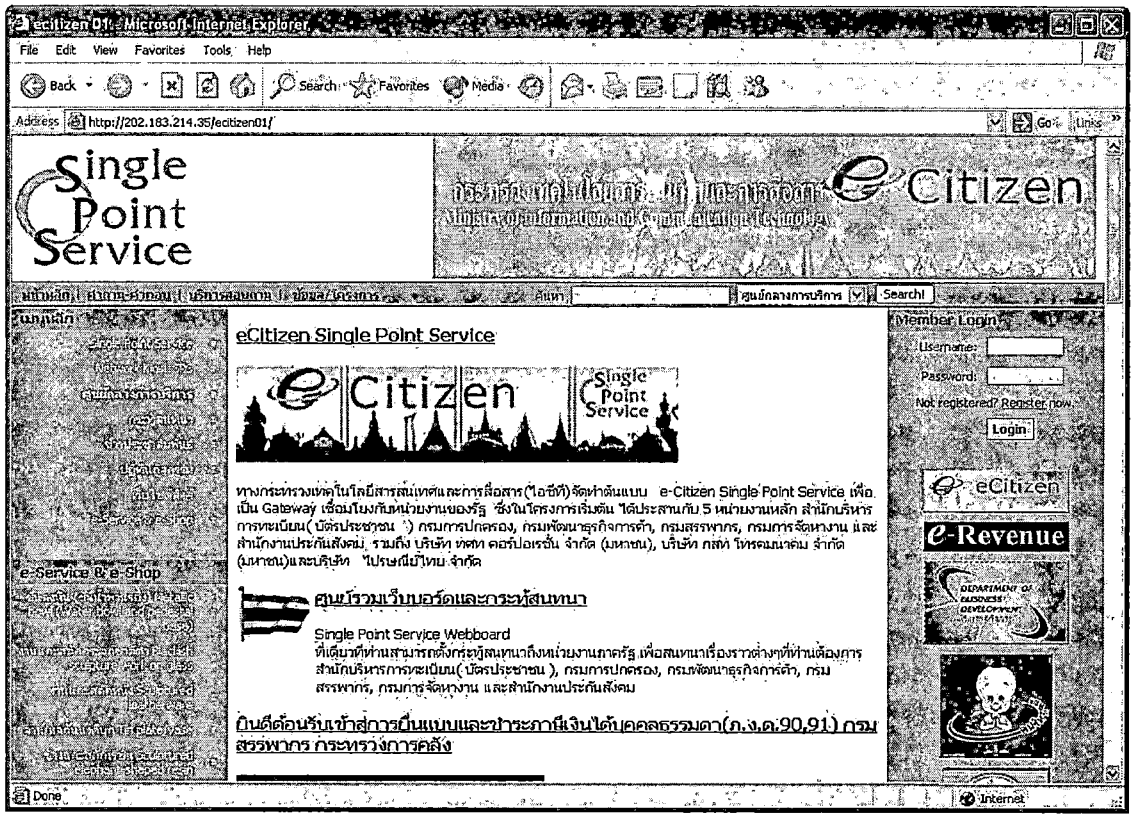
CHAPTER FIVE

IMPLEMENTATION AND TRANSITION PLAN

Implementation Process

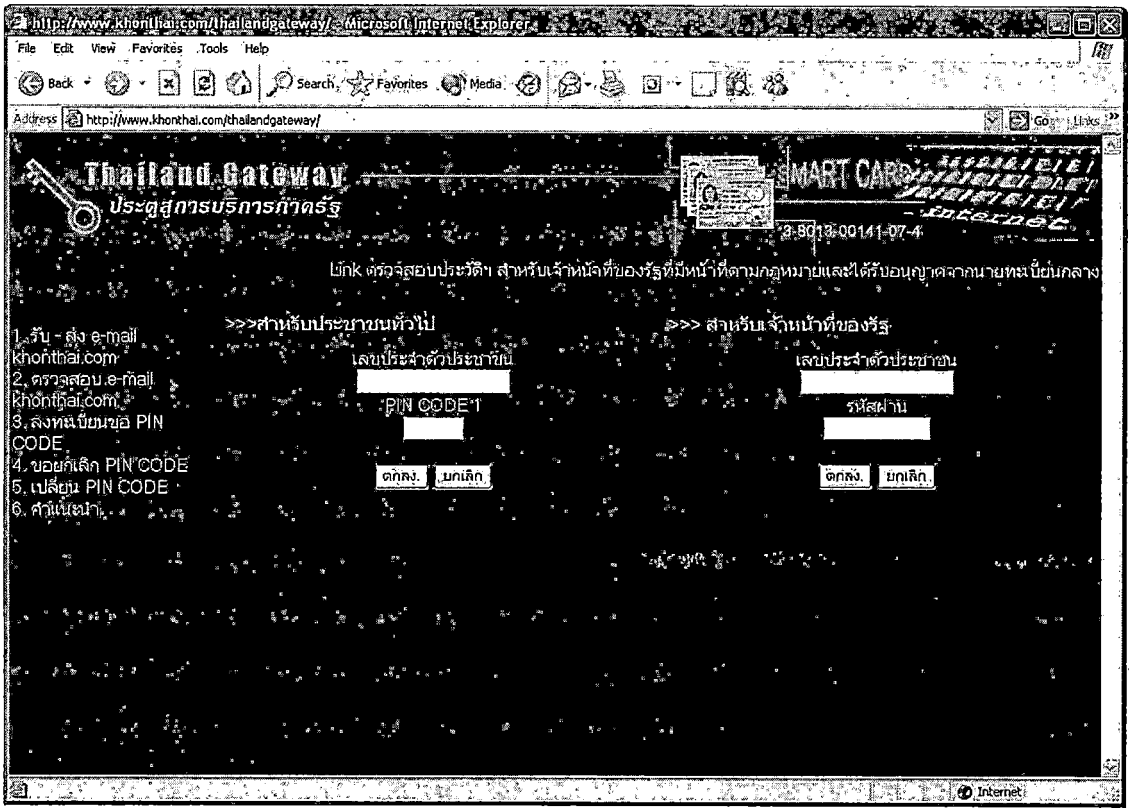
The implementation of the electronic government project in the Ministry of Interior of Thailand will make use of the E-Service in several public services. The development of information and communication technology with reliability and security, the enhancement of knowledge within the agencies, and the improvement of exchanging information are required at this point to accomplish the idea of One-Stop-Service. Consequently, Thai citizens are promised to have equal access and retrieve information with this cutting-edge instrument.

The concept of E-Government may vary in different countries because of the differentiation in the environment and factors (See APPENDIX A). However, the portal site is required as the information center to get access to any public information or services. Therefore, in Thailand, the Ministry of Information and Communication Technology has already launched the portal sites, http://www.ecitizen.go.th (See Figure 1) and http://www.khonthai.com (See Figure 2), to be used according to this effort.



Source: Ministry of Information and Communication. 2003. E-Citizen Single Point Service.

Figure 1. Electronic Citizen Single Point Service Homepage



Source: Thailand Gateway. 1999.

Figure 2. Thailand Gateway Homepage

Preparation

Electronic government concept does not only engage with the government, but also any routine services the government provides to the citizens. To transform the process of workflow in the public sector into the new approach, there are many factors which have to be reviewed. Steps prior to implement the plan will be discussed in the followings:

1. The Ministry needs to clearly specify its vision. Requirements of the project will determine the objectives and goals. At this point, broad visions for different divisions and agencies must lead to the same target.
2. In general, reforming the public sector involves with contract, investment, personnel, and plan. Without a good management team, it is impossible to sustain the procedures. In Thailand, after the government reengineering in 2002, the Ministry of Information and Communication Technology reserves responsibility on this issue.
3. The plan must be understandable and sustainable to be relevant to the needs. Detailed plan will be utilized to aid the different divisions and agencies in order to conduct their policies that lead to the thought of fast, accurate, and effective procedures.
4. E-Government is not the development of one division or agency itself. Coordinate and cooperate are also vital to accomplish the project. Therefore, the government, the bureaucrats, the citizens, and the private

sector must synchronize and realize the importance of the E-Government approach.

5. Improve the quality of education to eliminate gaps between people and the development of information technology. These gaps are the obstacles in the implementation phase because of the lack of understanding this new approach and how to use it can lead to the massive failure. In addition, providing public access to the Internet to the citizens is also an important issue for the Ministry (See APPENDIX B).
6. Frequently evaluating the project is crucial. Since Thai government has worked on establishing the E-Government for 2 years, there was no evaluation of the project at once. We have already seen success and failure in the different plans brought by the government that need to be evaluated. Thus, the Ministry must become conscious about consulting with the private companies.

Regarding the readiness of the information and communication systems in Thailand, the Ministry of Interior will be able to achieve 6 major targets within 2006:

1. The service divisions and agencies in care of the Ministry of Interior enable exchanging their internal information via electronic network.
2. The Ministry of Interior can also exchange its information with other ministries for the use of relevant information.
3. At least 60 percent of the Ministry's internal operations will make use of the information and communication technology.
4. 90 percent of the simple transaction services of the public can be done via the Internet.
5. At least 50 percent of the fee-paying transaction services must be available on the Internet with secured transaction.
6. The Ministry should be able to utilize the electronic procurement for the expenditure of at least 100,000 million Thai Baht.

Improve the quality of the management and public services usually mean reformation. Information and communication technology is the mean to replace or advance workflow to be more efficient and effective.

In order to support the Ministry's goals, any stakeholders of the Ministry of Interior need to realize the significance of convenience and rapid services

promised as well as become conscious regarding the transparency of bureaucracy. The stakeholders, especially private sector, can also participate in developing the project in the field of application software development. As a result, the project is also considered as the chance for private sector to move to another step toward their businesses.

Extensive Grounding

1. The Ministry of Interior is the segment where identification card has been issued. Develop the multi-application smart identification card is believed to be the preliminary pace for the E-Government approach. The objective of this development is to facilitate the citizens who use public services with the only identification. The initiative will not only fasten the public services, but also support the idea of paperless office in the Ministry. Information contained in the identification card must be standardized for the different divisions and agencies regarding the utilization. The minimum requirement of the card must concern

about the costs, securities, rights of managing information, and expandable features.

2. The procurement, as mentioned earlier, will be beneficial because of the E-Procurement approach. Convenience, rapid, and transparency are the main benefits. In addition, it drives the private sector to erect the ability and experience in competing in the world electronic commerce forum. The progress of the E-Procurement in the Ministry of Interior starts at the secretary office. Supersede the traditional process with technology means that rules and workflows may be mismatched. Therefore, to make the system realistically work, regulations of the any procedures must also be adapted.

3. The Ministry needs to standardize the application software to support the back office. Eliminating the decentralized software management in the different divisions and agencies to sustain system integration should be the priority the Ministry concerns. The integrated system which includes personnel, accounting, budgeting, and inventory must intend

to eradicate redundancy and excess expenditure that the Ministry of Interior has absorbed for centuries.

4. Government Data Exchange (GDX) is the structure to be executed as the mean in the E-Government project. Information is transferring via high-speed intranet for the Ministry's divisions and agencies to gain authorized access into. Accordingly, preparation of the information system must be performed cautiously for security purposes.

5. E-Government project cannot be implemented if the employees do not have knowledge to exert and exercise it. The Ministry of Interior and the Ministry of Information and Communication Technology must cooperate to establish an E-Government institution to educate their employees as well as to instruct the Thai citizens and private sector by demonstrating the benefits of the project. In order to administer the E-Government institution, the Ministry of Information and Communication Technology, which has more flexibility in its organization than others, may be responsible for developing the

curriculum and inculcating the lessons with the board dimensions of information and communication technology.

Administration Organizing

To administer the system, the Ministry has to propose in the understanding, recognizing, and cooperating in implementing its master plan of country development as its advance. Accordingly, different plans must be developed by all service divisions and agencies in care of the Ministry of Interior within 5 years to move forward E-Government project onto the same way.

Additionally, the mechanism to build the complexity between planning, budgeting, and personnel is projected to be matched with the premeditated system. Assigning responsibilities to specific supervision has become crucial in order to continue to succeed.

Monitoring and Evaluating

Monitoring and evaluating are important for any projects. Since the reform of the Ministry of Interior by employing the E-Government approach has been considered as a national project and requires a lot of investment, it can no longer be a failure. The followings are the guidelines for monitoring and evaluating:

1. The creation of indicator to be used as a determinant of the success and the impact of the project. Three levels of indicator: outcome, output, and effectiveness, should be included at this point.
2. The integration of database for those indicators allows the administrator to see success and failure at any points.

The indicators mentioned above can be categorized by various keys:

1. Total number of the Ministry's service divisions and agencies that have implemented the use of information and communication technology.
2. Total number of internal operation within the Ministry's service divisions and agencies that use information and communication technology.
3. Total number of public service provided by the Ministry of Interior that can be done via electronic transaction.
4. The availability of the citizens who have access to electronic transaction throughout the country.
5. The capacity of the Ministry to exchange its information with other government organizations.

6. Total number of procurement that has been done electronically.

7. Total number of the Ministry's service divisions and agencies that employ secured transaction of the information.

For the Ministry, this process should be initiated by government officers who understand the problems, realize the negative results, and understand the differences between positive and negative results that are likely to occur if the problems persist.

In conclusion, the monitoring and evaluating tools are provided to determine if the objectives and goals are being achieved. Besides, in the strategic planning activities, these tools allow the Ministry to be able to revise, solve, or change the plan if necessary. Bringing the success phase to the Thai public sector reformation will be beneficial for the Ministry and the Thai citizens in the long run.

Costs of the Project

Costs of establishing E-Government can vary greatly. E-Government strategy should not be viewed strictly from one perspective, but rather from the broader impact on the Ministry's outcomes that can be achieved. Evaluating the

cost-benefit of the project is required for the Ministry as another approach to determine its success.

Reengineering Cost

The E-Government projects incorporate reengineering opportunities to restructure existing methods of producing and processing the information to take potential advantage of the information technology (Aksararak & Pornwasin, 2004). Traditional methods, service complications, and unacceptable service practices are promised to be eliminated.

Increased Cost for Agencies

Cost may be increased for the Ministry's service divisions and agencies while the citizens are dealing with the public services more efficient. The Ministry must also review the cost-benefit method in efforts to monitor the project.

Social Costs

E-Government may give impact to employees, work relationships, and the relationships the Ministry has with the Thai citizens. Care must be taken not to eliminate access for special groups while taking advantage of the information technology

CHAPTER SIX

CONCLUSIONS AND RECOMMENDATIONS

Conclusion

The Ministry of Interior of Thailand, who serves the population of around 61 millions and surface area of 199 thousand square miles, has gone through many attempts of reformation and modernization over s period of time.

In conclusion, it is obvious that this reform aims at improving all the public services provided to the Thai citizens. E-Government approach has been employed as the vehicle that leads to the success. However, it is important for the Ministry of Interior to assess its organization and determine the right strategy to better serve the public. More importantly, to make the sustainable, the Ministry must adjust its processes amid dynamic changes in the environment.

The new strategy supported by the E-Government concept has a close focus on results in terms of accuracy, efficiency, effectiveness, quality of services, equality, and people's satisfaction. It is vital that the information and communication technology does not only mean to improve the internal operations, but also supports these outcomes.

Recommendations

Providing public services on the web will be a new approach. If this E-Government plan is fully implemented, the Ministry's services will be well perceived by the Thai citizens. Therefore, changing their attitudes toward the Ministry's public image will no longer be obscure.

The Ministry, with its abilities in the development of information and communication technology, will not only benefits from the elimination of complicated information and accelerate its processes, but also be able to fight against the discrimination in providing services to the citizens.

However, this E-Government project is only served as a guideline for the Ministry of Interior of Thailand to prepare and is opened for debate. To implement realistically, the Ministry must employ investigation and plan in further detail to undoubtedly meet the citizens' demands.

APPENDIX A

THE NETWORKED READINESS INDEX

The Network Readiness Index 2002-2003

Country	Score	NRI Rank
Finland	5.92	1
United States	5.79	2
Singapore	5.74	3
Sweden	5.58	4
Iceland	5.51	5
Canada	5.44	6
United Kingdom	5.35	7
Denmark	5.33	8
Taiwan	5.31	9
Germany	5.29	10
Netherlands	5.26	11
Israel	5.22	12
Switzerland	5.18	13
Korea	5.10	14
Australia	5.04	15
Austria	5.01	16
Norway	5.00	17
Hong Kong SAR	4.99	18
France	4.97	19
Japan	4.95	20
Ireland	4.89	21
Belgium	4.83	22
New Zealand	4.70	23
Estonia	4.69	24
Spain	4.67	25
Italy	4.60	26
Luxembourg	4.55	27
Czech Rep.	4.43	28
Brazil	4.40	29
Hungary	4.30	30
Portugal	4.28	31
Malaysia	4.28	32
Slovenia	4.23	33
Tunisia	4.16	34
Chile	4.14	35
South Africa	3.94	36
India	3.89	37
Latvia	3.87	38
Poland	3.85	39
Slovak Rep.	3.85	40
Thailand	3.80	41

Country	Score	NRI Rank
Greece	3.77	42
China	3.70	43
Botswana	3.68	44
Argentina	3.67	45
Lithuania	3.65	46
Mexico	3.63	47
Croatia	3.62	48
Costa Rica	3.57	49
Turkey	3.57	50
Jordan	3.51	51
Morocco	3.50	52
Namibia	3.47	53
Sri Lanka	3.45	54
Uruguay	3.45	55
Mauritius	3.44	56
Dominican Rep.	3.40	57
Trinidad	3.36	58
Columbia	3.33	59
Jamaica	3.31	60
Panama	3.30	61
Philippines	3.25	62
El Salvador	2.17	63
Indonesia	3.16	64
Egypt	3.13	65
Venezuela	3.11	66
Peru	3.10	67
Bulgaria	3.03	68
Russian Fed.	2.99	69
Ukraine	2.98	70
Vietnam	2.96	71
Romania	2.66	72
Guatemala	2.63	73
Nigeria	2.62	74
Ecuador	2.60	75
Paraguay	2.54	76
Bangladesh	2.53	77
Bolivia	2.47	78
Nicaragua	2.44	79
Zimbabwe	2.42	80
Honduras	2.37	81
Haiti	2.07	82

Source: World Economic Forum. 2003.

APPENDIX B

PUBLIC ACCESS TO THE INTERNET

Public Access to the Internet 2002-2003

1 = *very limited*, 7 = *pervasive, most people have frequent Internet access*

Rank	Country	Value
1	Iceland	6.38
2	Finland	6.33
3	Denmark	5.97
4	Norway	5.83
5	Sweden	5.77
6	Singapore	5.68
7	Korea	5.52
8	Canada	5.43
9	Netherlands	5.36
10	United States	5.36
11	Estonia	5.30
12	Australia	5.27
13	Peru	5.24
14	New Zealand	5.23
15	United Kingdom	5.00
16	Argentina	4.87
17	Belgium	4.79
18	Hong Kong SAR	4.76
19	Switzerland	4.73
20	Austria	4.71
21	Germany	4.67
22	Taiwan	4.36
23	Costa Rica	4.25
24	Bolivia	4.20
25	Spain	4.14
26	Japan	4.08
27	Czech Rep.	4.03
28	Portugal	3.98
29	India	3.96
30	Turkey	3.94
31	Ireland	3.93
32	Israel	3.91
33	France	3.91
34	Hungary	3.74
35	Tunisia	3.70
36	Slovenia	3.70
37	Bulgaria	3.67
38	Colombia	3.63
39	Paraguay	3.60
40	Botswana	3.60
41	Panama	3.55

Rank	Country	Value
42	Uruguay	3.55
43	El Salvador	3.53
44	Jordan	3.47
45	Malaysia	3.44
46	Chile	3.44
47	Croatia	3.43
48	Morocco	3.42
49	Italy	3.42
50	Indonesia	3.42
51	Thailand	3.41
52	Slovak Rep.	3.40
53	Namibia	3.35
54	Latvia	3.32
55	Trinidad	3.30
56	Ecuador	3.27
57	Lithuania	3.25
58	Haiti	3.20
59	Egypt	3.17
60	Venezuela	3.12
61	Brazil	3.11
62	Poland	3.11
63	South Africa	3.09
64	Mexico	3.00
65	Mauritius	2.94
66	Guatemala	2.93
67	Dominican Rep.	2.91
68	Luxembourg	2.83
69	China	2.83
70	Philippines	2.800
71	Sri Lanka	2.80
72	Nicaragua	2.78
73	Greece	2.71
74	Jamaica	2.69
75	Ukraine	2.60
76	Vietnam	2.59
77	Russian Fed.	2.56
78	Romania	2.44
79	Honduras	2.32
80	Zimbabwe	2.24
81	Nigeria	2.18
82	Bangladesh	1.80

Source: World Economic Forum. 2003.

REFERENCES

Aksararak, S., & Pornwasin, A. (2004). Being E-Citizen by E-Government. Bangkok: Se-Education.

Applegate, L. M., Austin, R. D., & McFarlan, F. W. (2003). Corporate information strategy and management. Boston: McGraw-Hill.

Boar, B. H. (1993). The art of strategic planning for information technology. New York: John Wiley & Sons, Inc.

Cassidy, A. (1999). A practical guide to information systems strategic planning. Florida: St. Lucie Press.

Cole, E. (2001). Hackers beware. Indianapolis: New Riders Publishing.

Forman, M. (2002). Statement of Mark Forman before the House Subcommittee on technology and procurement policy. Retrieved March 14, 2004, from http://www.cio.gov/archive/testimony_forman_10_01_02.html

Gardner, C. (2000). The valuation of information technology. New York: John Wiley & Sons, Inc.

Koontz, L. D. (2003). Electronic government: Progress and challenges in implementing the Office of Personnel Management's initiatives. Washington, D.C.: United States General Accounting Office.

Kotler, P. (1994). Marketing management analysis, planning, implementation, and control. New Jersey: Prentice-Hall, Inc.

Lamb, C. W., Hair, J. F., & McDaniel, C. (2000). Marketing. Ohio: South-Western College Publishing Co.

Lee, V. E., & Smith, J. B. (2001). Restructuring high schools for equity and excellence: What works. New York: Teachers College Press.

Macdonald, S. (1998). Information for innovation. New York: Oxford University Press, Inc.

McClure, D. L. (2001). Electronic government: Challenge must be addressed with effective leadership and management. Washington, D.C.: United States General Accounting Office.

Ministry of Information and Communication Technology of Thailand. (2003). E-Citizen single point service. Retrieved March 14, 2004, from http://202.183.214.35/ecitizen01

Ministry of Information and Communication Technology of Thailand. (2003). Development of E-Government strategy in Thailand. Retrieved January 2, 2004, from http://www.mict.go.th/news/Acrobat/1_multipart_xF8FF_2_eGov_draft_March_26.zip

Ministry of Information and Communication Technology of Thailand. (2003). E-Government in Thailand. Retrieved December 25, 2003, from http://www.mict.go.th/news/Acrobat/eGov-final-blue.zip

Ministry of Information and Communication Technology of Thailand. (2003). ICT master plan. Retrieved December 25, 2003, from http://www.mict.go.th/news/Plan.aspx?plan=ict_masterplan1.pdf

Ministry of Interior of Thailand. (2003). Ministry of Interior in brief. Retrieved January 20, 2004, from http://www.moi.go.th/moi.htm

Morgan, G. (1996). Images of organization. California: SAGE Publications, Inc.

Royal Thai Government. (2001). Policy of the government. Retrieved February 20, 2004, from http://www.thaigov.go.th/index-eng.htm

Solomon, M. R. (1999). Consumer behavior. New Jersey: Prentice-Hall, Inc.

Spewak, S. H. (1993). Enterprise architecture planning: Developing a blueprint for data, applications, and technology. New York: John Wiley & Sons, Inc.

Surachaichotiphan, S. (2001). Corruption in the Thai political system. California.

Sutherland, E., & Morieux, Y. (1991). Business strategy and information technology. London: Routledge.

Suthikool, S. (2003). Thai bureaucracy reform: Challenges of the public sector management reform plan 1997-2001. California.

Tapscott, D., & Caston, A. (1993). Paradigm shift. New York: McGraw-Hill.

Thailand gateway. (1999). Retrieved March 14, 2004, from http://www.khonthai.com/thailandgateway

Turban, E., McLean, E., & Wetherbe, J. (2001). Information technology for management. New york: John Wiler & Sons, Inc.

United States General Accounting Office. (2003). A framework for assessing and improving enterprise architecture management. Washington, D.C.: United States General Accounting Office.

Willemssen, J. C. (2003). Electronic government: Success of the Office of Management and Budget's 25 initiatives depends on effective management and oversight. Washington, D.C.: United States General Accounting Office.

World Economic Forum. (2003). Networked readiness index rankings. Retrieved February 20, 2004, from http://www.weforum.org/pdf/Global_Competitiveness_Reports/Reports/GITR_2002_2003/GITR_Rankings.pdf

Yuthavong, Y., & Wojcik, A. M. (1997). Science and technology in Thailand: Lessons from a developing economy. Bangkok: NSTDA/UNESCO Publishing.